Think Fremont

Think Fremont

Fremont Economic Climate and Warm Springs Update Legislative Brunch 5/2/13

Kelly Kline

Economic Development Director

State of the Union: 3 Questions

1. How do we attract more jobs to our shores?

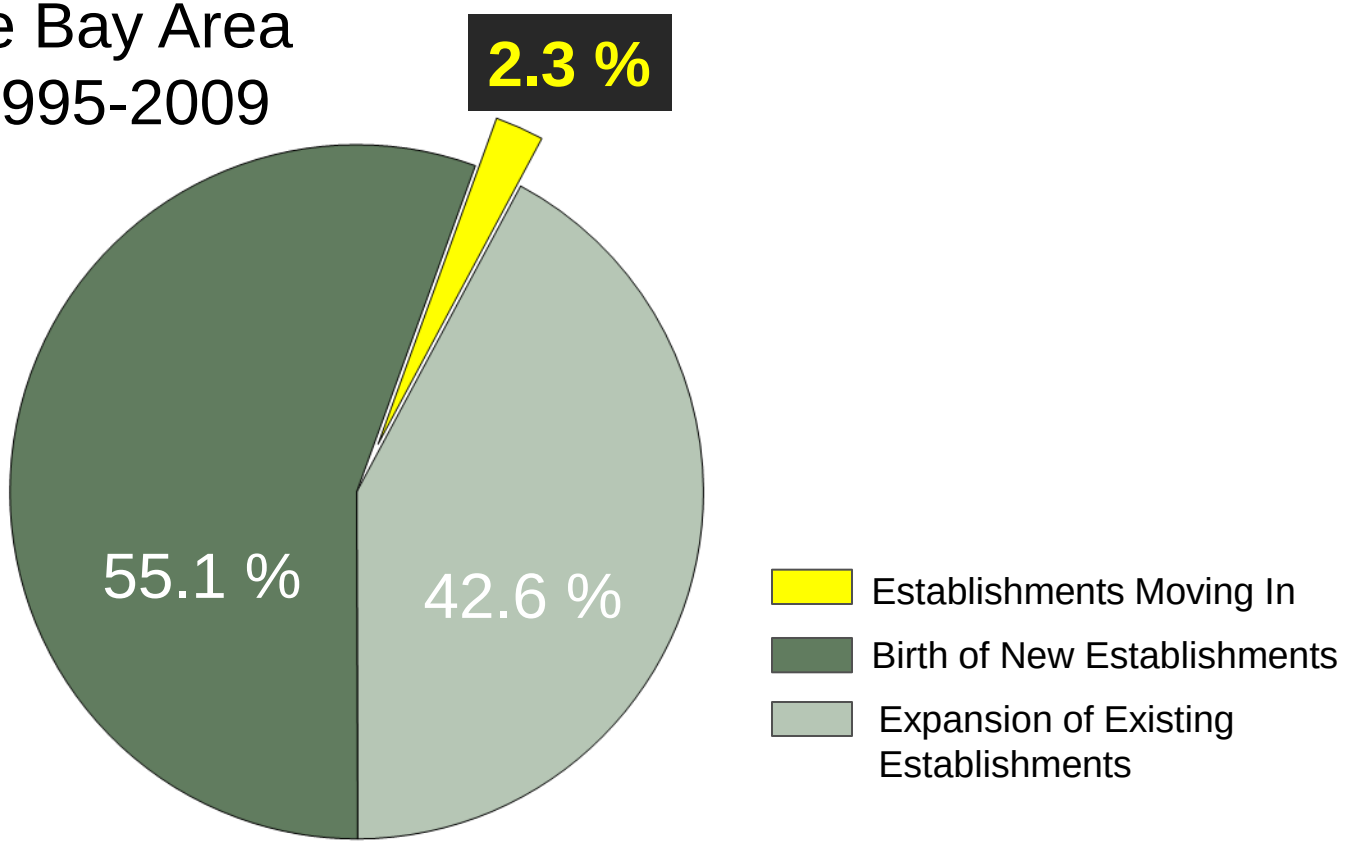
2. How do we equip our people with the skills needed to do those jobs?

3. How do we make sure that hard work leads to a decent living?

Think Fremont

Fremont Focus: Retention & Expansion

Job Creation in the Bay Area Annual Average, 1995-2009



Bay Area Council 2012 Bay Area Regional Economic Assessment
Source:2010 National Employment Time Series (NETS) Database, calculations by Bay Area Council Economic Institute

Think Fremont

Innovation Scorecard

Major Impediments Affecting Innovative Companies' Growth

1. Access to late stage Venture Capital and Private Equity
2. Successful navigation of State & Federal Gov. regulations / programs
3. Securing large-scale global customers and partners
4. Innovation & Industry linkages with Higher Education

Think Fremont

Strengthening our Innovation Economy

1. Take the lead in Advanced Manufacturing
2. Focus on Key Industries – Clean & Bio Tech
3. Establish/Enhance Innovation District
4. Leverage Warm Springs TOD Opportunity for Employment Growth

Fremont's Innovation Capacity:	**2013: 76**
	2018: 85

Think Fremont

Reemergence of Advanced Manufacturing

Db Control	Plexus	Essai	Tesla	Excelitas
Asteelflash				Sanmina
Quanta				Intematix
Mattson				
Sonic				Bema
Corsair	I2A Technologies	Synnex		Sparqtron

Think Fremont

Silicon Valley Manufacturing Roundtable

manex

THE CITY OF SANTA CLARA CALIFORNIA
The Mission City
1852

SVEDA
Silicon Valley Economic Development Alliance

CITY OF Fremont

STANFORD UNIVERSITY

CITY OF MORGAN HILL

San José State UNIVERSITY

CITY OF SAN JOSE
CAPITAL OF SILICON VALLEY

Joint Venture
SILICON VALLEY NETWORK

Governor's Office of Business and Economic Development GO-Biz

Think Fremont

Clean Tech & Bio Tech

	Clean Tech	Bio Tech
# of Companies	30+	80 (including suppliers)
Incentives	• Business License Tax Exemption • LEED Platinum Fee Reduction	• Business License Tax Exemption
Initiatives / Resources	• Demo Policy • Clean Tech Open	• E.Bay BioMed Manufacturing Network • Ohlone Bio Center
"Anchors"	Delta Products, Solaria, Deeya, Oorja, Soraa, Intematix	Boston Scientific, Thermo Fisher, Boehringer Ingleheim

Think Fremont

Fremont's Innovation District

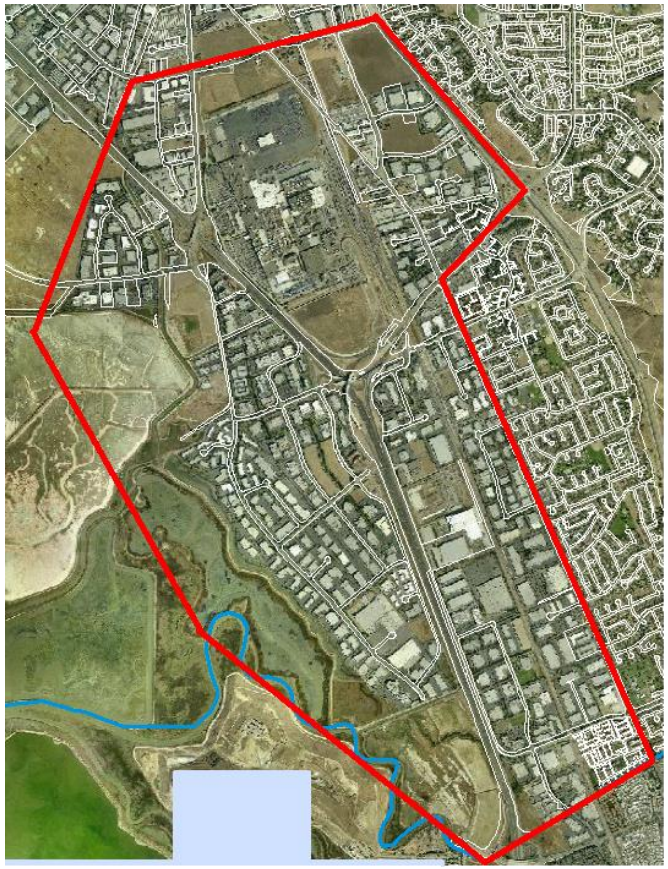
"FAST" Strategy:

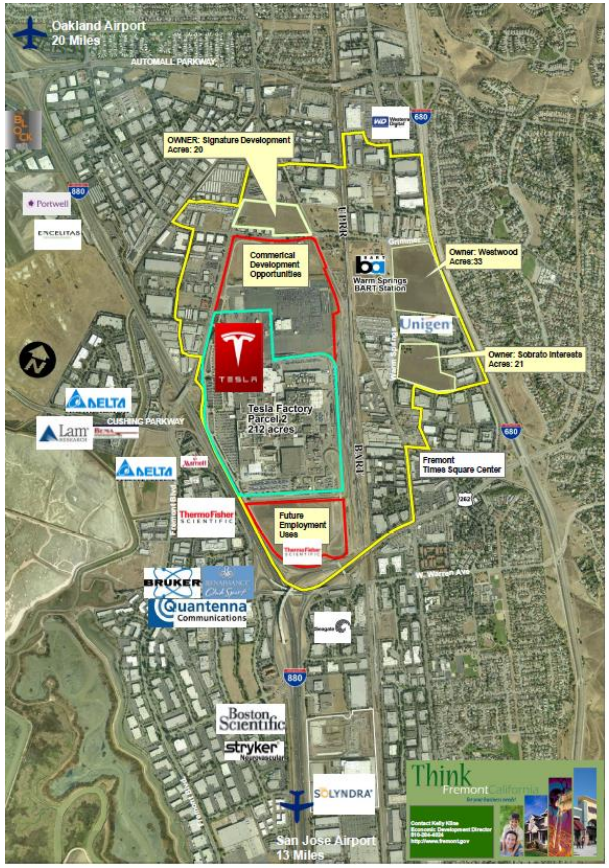
Fremont **A**dvanced &

Sustainable **T**echnology

Think Fremont

Proposed Innovation District Boundary



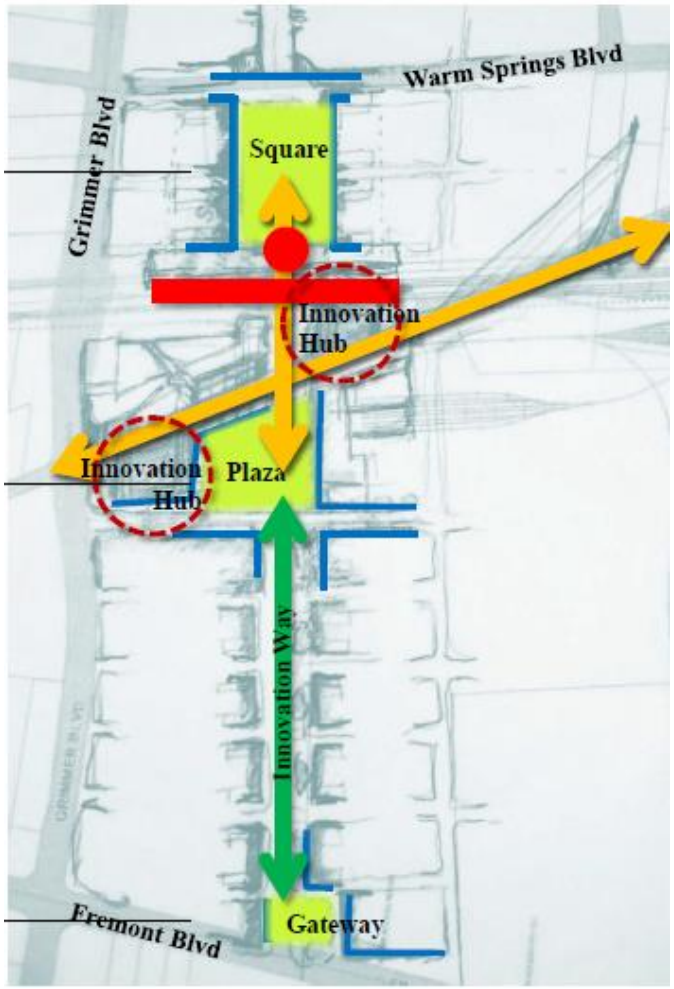


Think Fremont

Catalytic Opportunity in Warm Springs

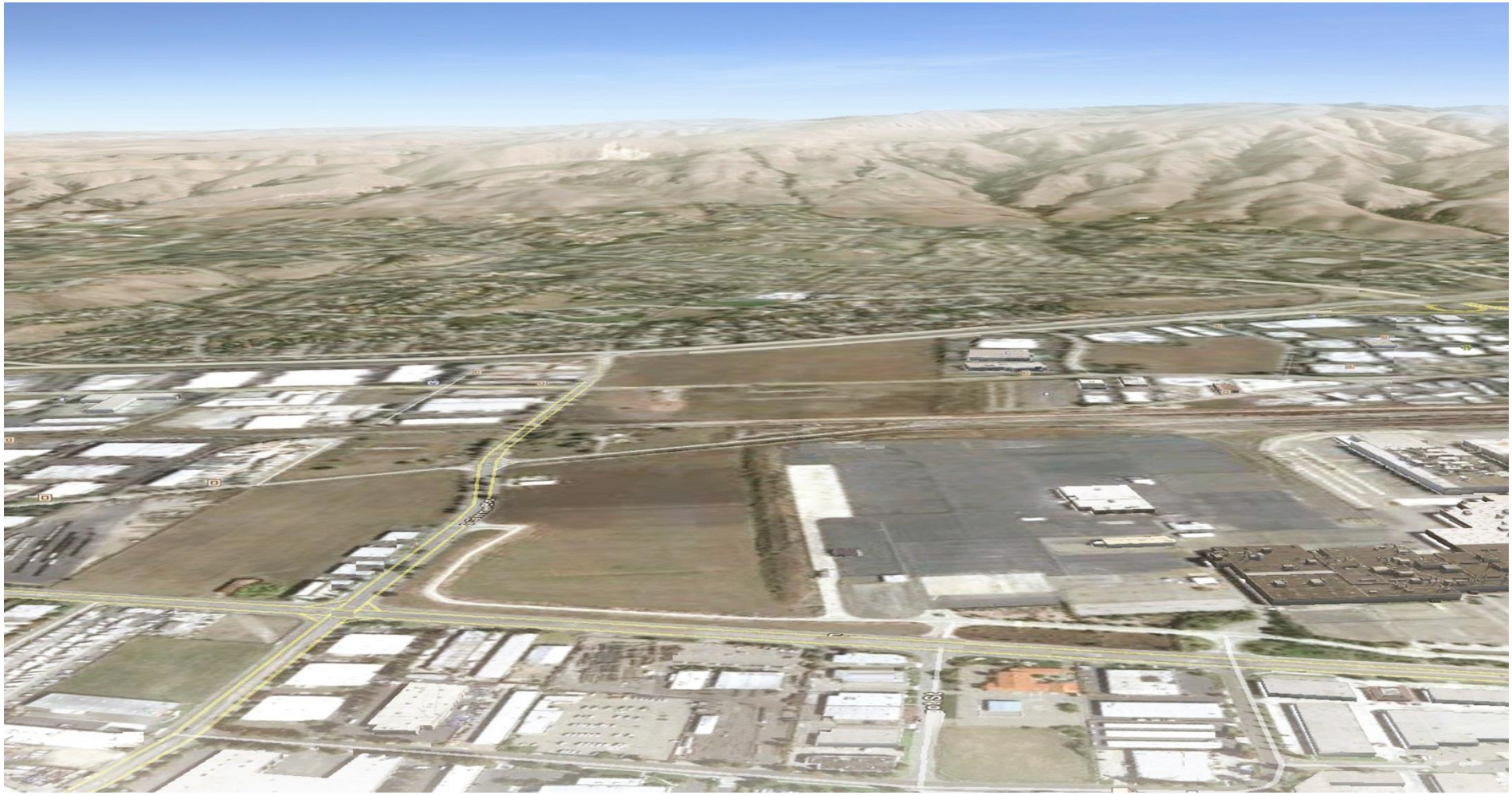
Think Fremont

Urban Land Institute Panel



Think Fremont

Warm Springs Existing Condition



Think Fremont

Future Vision – Parcel North of Tesla

Think Fremont

Future Vision – Looking East on Innovation Way

Think Fremont

Future Vision – BART Property, Looking East

Think Fremont

Warm Springs Timeline 2013-15

MILESTONE	DATE
• UP Property RFP	2013
• Community Plan/EIR Complete	2013
• Thermo Fisher Opening	2014
• BART Station Opening	2015

The Future of UP's North Parcel

Think Fremont

Got “Place”? Adding Amenities

Downtown Fremont:

- New Project Manager
- 1st Phase Underway
- Whole Foods & Paragon open this September

The Block:

- Construction Underway
- New Tenants include Men’s Wearhouse

Think Fremont

Telling Our Story…

The Hoffman Agency

IndustryWeek IW CONNECTING MANUFACTURING'S LEADERS

SizeUp

NBC BAY AREA

Think Fremont

Think Fremont

Smart Grid, Smart City

Christine Hertzog

Managing Director, Smart Grid Library

Author, “Smart Grid Dictionary”

Smart Grid: Fremont Ecosystems and Opportunities

Presented by Christine Hertzog
Managing Director,
Smart Grid Library

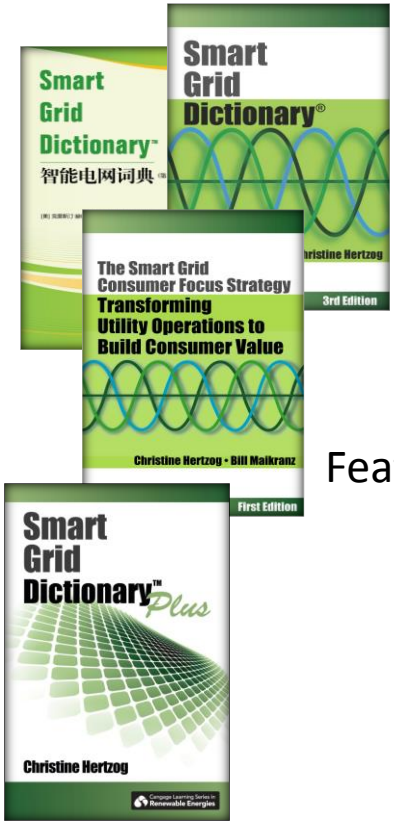
May 2013

Agenda

- Smart Grid
  - Definition of Smart Grid
  - Smart Grid Drivers
- City of Fremont strategic Smart Grid ecosystems
  - Semiconductors
  - Communications
  - Solar
  - Energy storage
  - Energy efficiency & LEDs
  - Smart Transportation
- Three constructive actions

About the Smart Grid Library

- Transformational consulting and analysis for clients
  - Strategic Thought Leadership and Evangelism
  - Entry strategies/Business development
  - Go-to-Market
- Focus on Smart Grid and M2M
  - Grid: Distribution to consumer edge
  - Contact centers and consumer experience
  - Disruptive technology impacts and risk mitigation



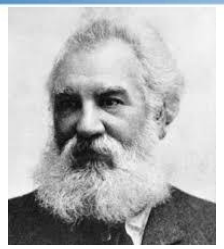
Major publications

- Smart Grid Dictionary (English, Chinese, German)
- The Smart Grid Consumer Focus Strategy
- Smart Grid Dictionary Plus
- Syndicated blog

Featured in

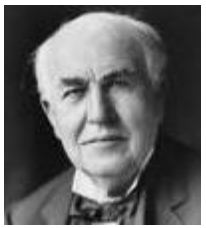
- The Energy Collective
- ElectricityPolicy.com
- IEEE
- Intelligent Utility Daily
- Greenbiz
- European Energy Review
- SAP Gamechangers
- Industry ezines

Today's Power Grid



Bell **wouldn't** recognize today's communications networks

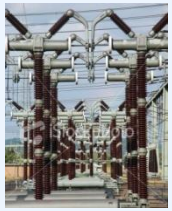
Edison **would** recognize today's power grid



Generation

Transmission

Distribution



Definition of Smart Grid

Generation	Transmission	Distribution	Consumption
			

Bi-directional electric grids and communication networks that improve the reliability, security, and efficiency of the electric system for small- to large-scale generation, transmission, distribution, storage, and consumption.

It includes software and **hardware applications** for dynamic, integrated, and interoperable optimization of electric system operations, maintenance, and planning; distributed energy resources interconnection and integration; and feedback and controls and the consumer level.

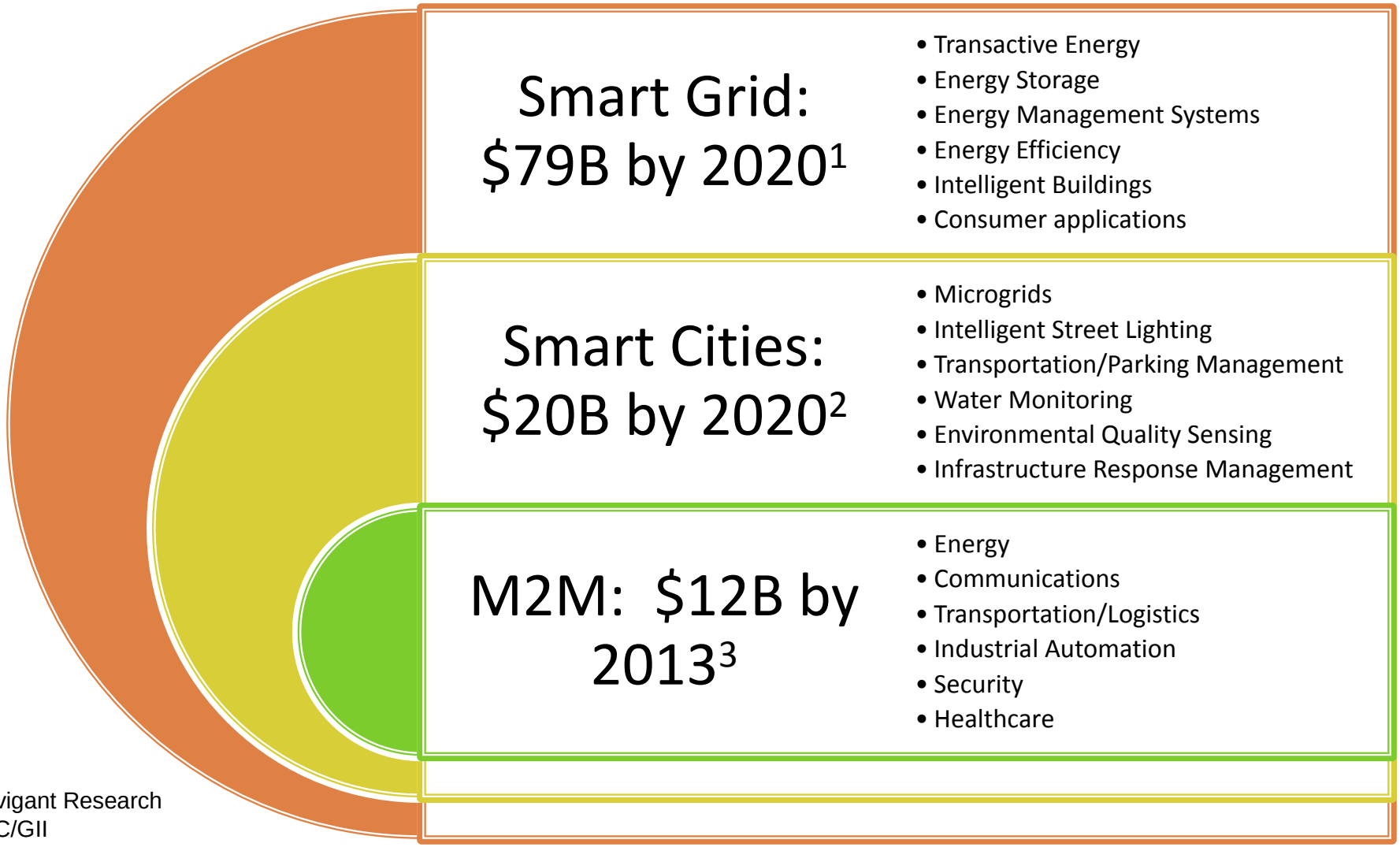
From the Smart Grid Dictionary, 4th Edition

Smart Grid Market Drivers

- Energy demand growing — projected to grow globally by 36% from 2010 to 2035, including energy efficiency increases[1]
- Aging generating capacity needs to be replaced — by 2025, most coal-fired plants and by 2030, most nuclear plants, will need to be rebuilt or retired[2]
- Progressive regulation and legislation - Renewable portfolio standards in 38 states driving grid upgrades
- Need for new transmission and distribution — $180B of planned US transmission projects[3]
- Aging infrastructure driven by peak demand — 25% of distribution and 10% of generation and transmission assets (worth multi B$) used less than 400 hours per year[4]
- Energy surety — 90% of outages occur at distribution grid[5] at a cost of $80B/yr[6]

1) IEA, 2010. 2) NERC, 2010. 3) Quanta, 2010. 4) EPRI, 2010. 5) NARUC, 2011. 6) LBNL

Significant Market Potentials



1 - Navigant Research
2 – IDC/GII
3 – Harbor Research

Fremont's Smart Grid Value Chain

Generation	Transmission	Distribution	Consumption
			

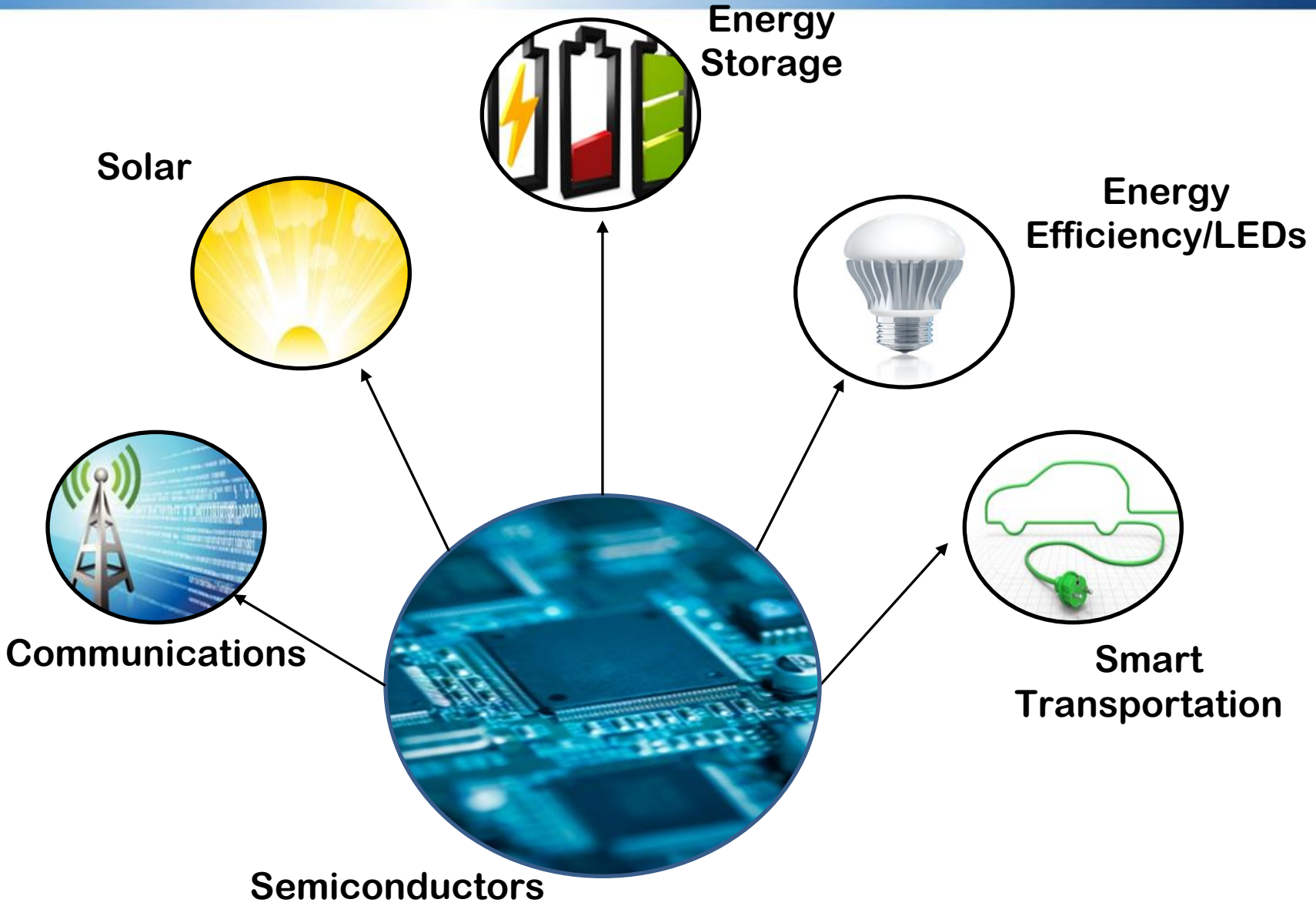
Generation and energy storage across the supply chain

Communications/IEDs

Energy Efficiency Technologies

Technology	Technology	Technology	Technology
• Photo-voltaics • Inverters • Energy storage	• Communications • Energy storage	• Communications • Photo-voltaics • Energy storage	• LEDs • EVs • Photo-voltaics • Energy storage
Ecosystem strength	**Ecosystem strength**	**Ecosystem strength**	**Ecosystem strength**
• Solar (16) • Semiconductor (13) • Energy storage (6)	• Communications (12) • Energy storage (6) • Semiconductor (13)	• Solar (16) • Semiconductor (13) • Energy storage (6) • Communications (12)	• Solar (16) • LED (10) • Energy storage (6) • Semiconductor (13) • Communications (12)

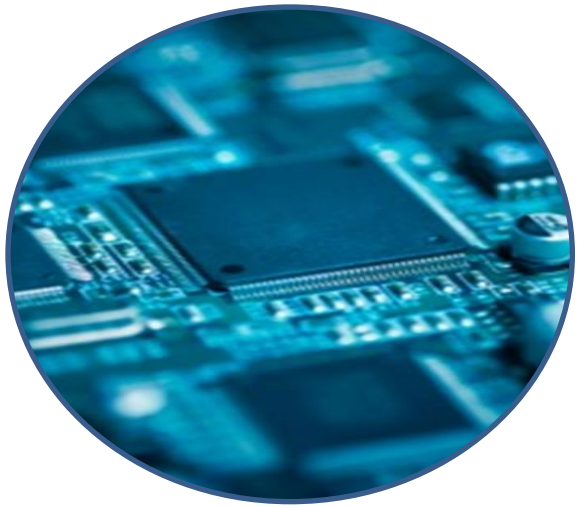
Fremont's Smart Grid Ecosystem



Fremont Smart Grid Ecosystems: Established Strengths

Semiconductors – Smart Grid DNA

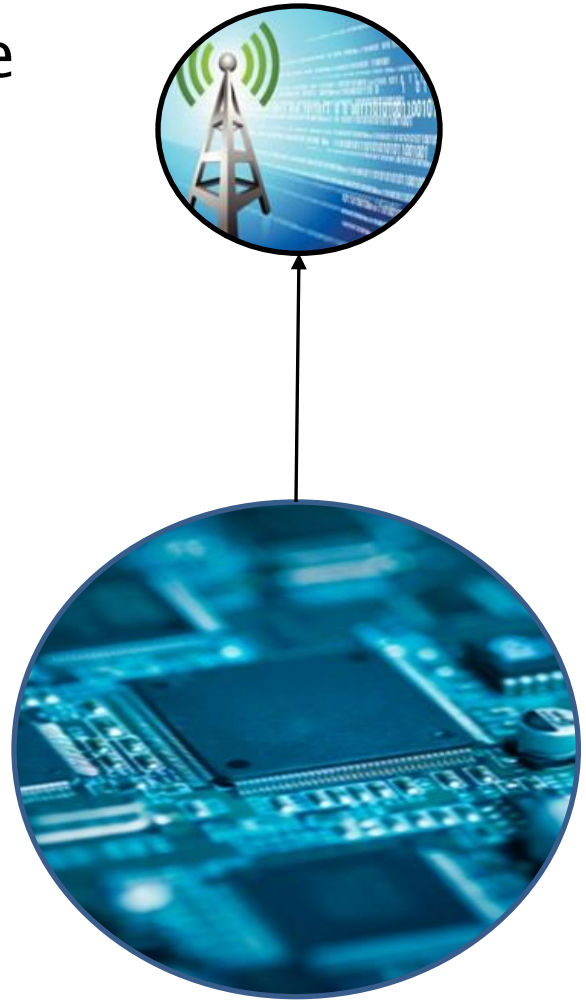
- Complete ecosystem
- Strong demand from Smart Grid components and applications
- Pervasive presence across Smart Grid value chain
- Increasingly embedded in electricity-consuming devices
  - Smart buildings and home controls markets – 11.1% CAGR to 2016
- Advanced manufacturing reliant on exceptional power quality



Fremont Smart Grid Ecosystems: Established Strengths

Communications – Smart Grid backbone

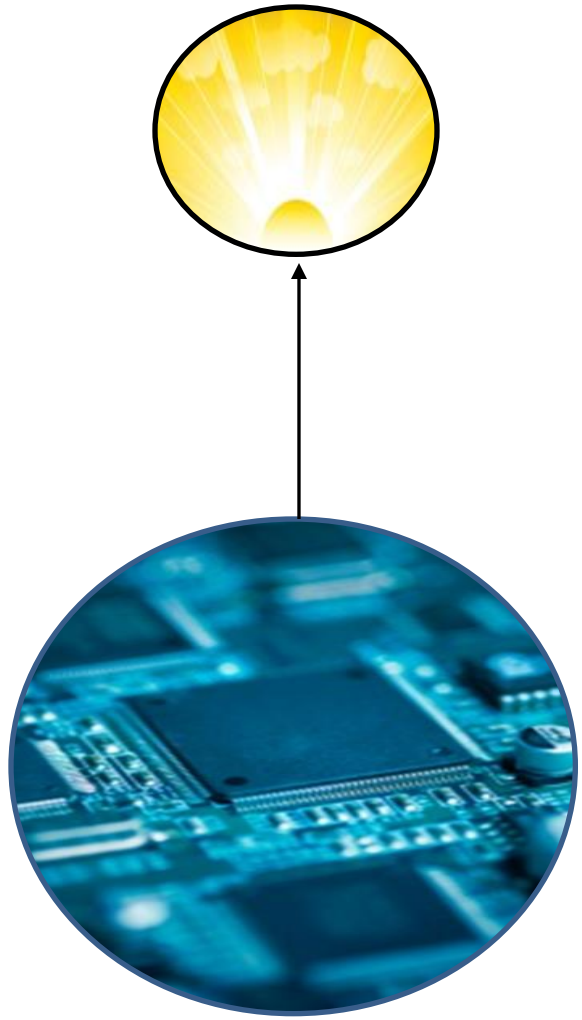
- Complete ecosystem
- $13B market by 2014 for Smart Grid wireless and wired technologies
  - 17% CAGR from 2012-2016
- Average utility has between 2-9 communications networks to support grid operations
- VC funds invested$72M in communications firms in 2012



Fremont Smart Grid Ecosystems: Established Strengths

Solar – widely deployed across the Smart Grid value chain

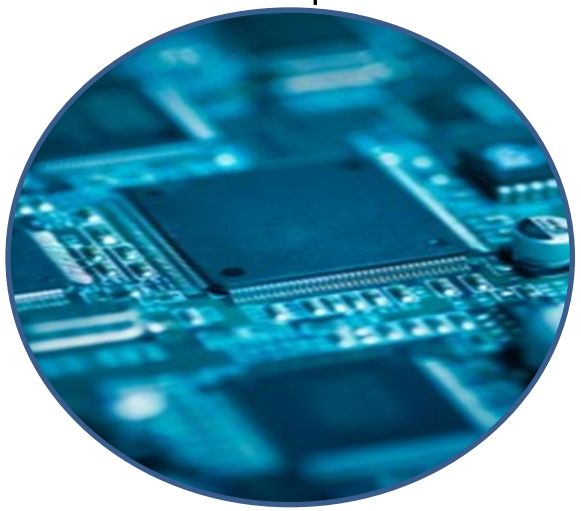
- Complete supply chain in close proximity
  - Manufacturing materials to distribution
- US 2012 market = $11.5B
- Global CAGR of 18.5% through 2020
- California has the most solar jobs of any state
- Innovations in finance improve market and employment possibilities



Fremont Smart Grid Ecosystems: Trending Strengths

Energy Storage trajectory similar to solar

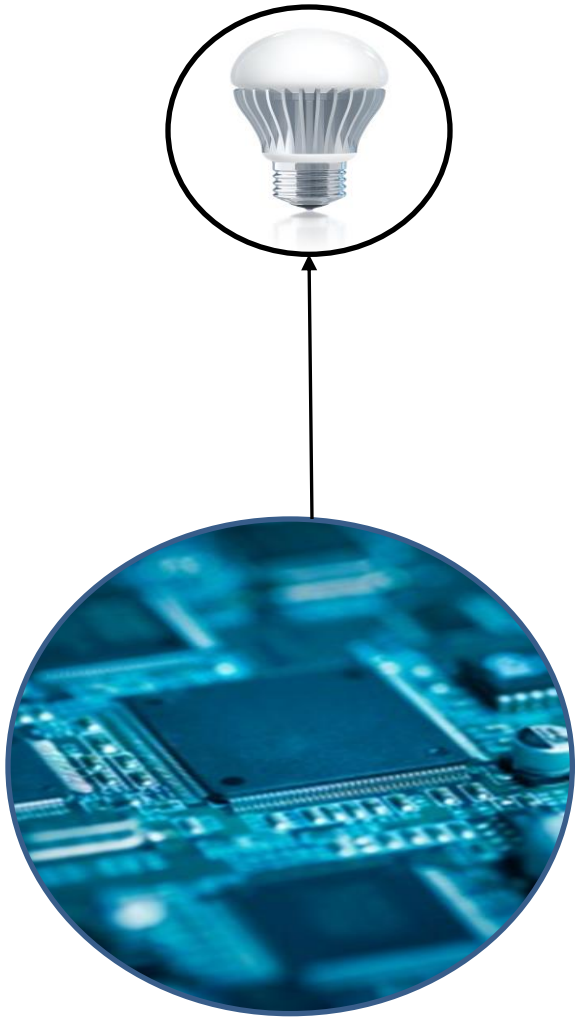
- Proximity to regional centers of expertise – SJ State battery program and CalCHARGE
- Excellent synergy with renewables like solar
- $113B global market by 2017
- Fremont expertise with industrial manufacturing chemistries can attract chemical energy storage companies
- Current US grid storage capacity is 1% – significant room for growth



Fremont Smart Grid Ecosystems: Trending Strengths

Embedded energy efficiency technologies gain wide deployment

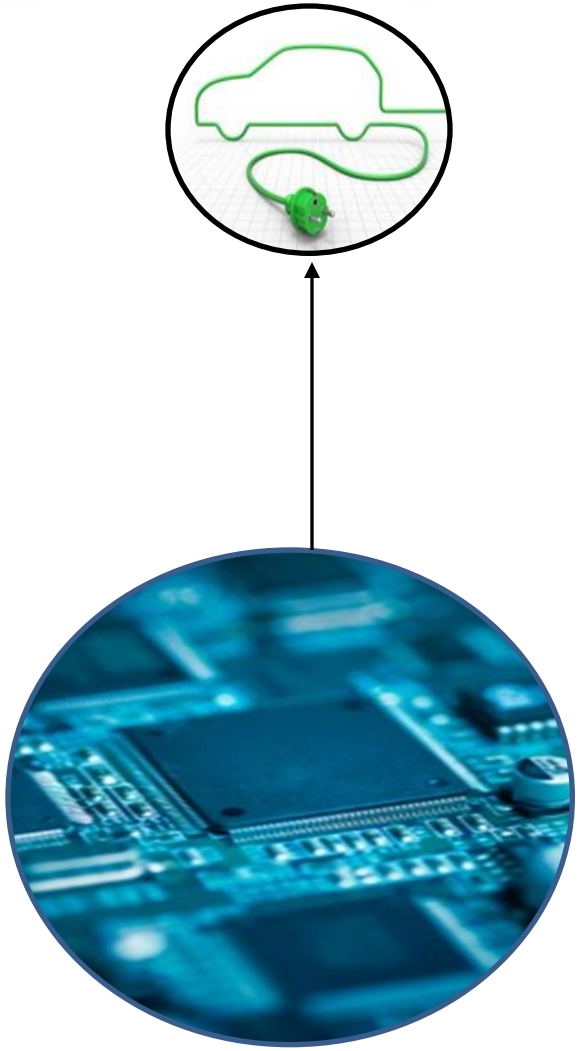
- $15B global market potential for LED components by 2017
- $3.1B global market potential for energy harvesting
  - Energy from light, heat, RF, motion powers sensors
  - Rapid tech evolutions and reductions in costs
  - Reduce electricity needs
- VC funds invested $171M in energy efficiency technologies in 2012



Fremont Smart Grid Ecosystems: Potential Strengths

Smart Transportation ecosystem complements Smart Grid

- Energy storage
  - Fleet battery management
- Consumption management
  - Prosumer potential – smart charging
- Average ICE car contains 200 semiconductors
  - 15% increases projected to support efficiency, safety, and communications
  - Hybrid and EVs contain higher numbers



Constructive Actions

- Support the Master Limited Partnerships (MLP) Parity Act
  - Levels the playing field for renewable energies project capital
  - Reintroduced in US Senate and House on 4/24/2013
  - Endorsed by CalCEF
- Support CalCHARGE and similar initiatives for energy harvesting technologies with Fremont as local advanced manufacturing base
- Maintain Prop 39 funding to energy efficiency projects for city public buildings
  - Broadens potential customer base for a wider range of Fremont-based companies and solutions

"We now know a thousand ways not to build a light bulb"
Thomas Edison

Thank you!

For More Information and Insights

Christine Hertzog

chertzog@SmartGridLibrary.com

www.SmartGridLibrary.com

Think Fremont

State Economic Development Update

Kish Rajan, Director

Governor's Office of Business and Economic Development (Go-Biz)

Let's Stay in Touch

/ City of Fremont

/ Fremont Economic Development

@ Fremont_CA

@ Fremont4Biz

www.Fremont.gov/LegislativeAffairs

www.ThinkFremont.com